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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,131	01/23/2001	Yong Cheol Park	2080-3-01	3339

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EXAMINER

ORTIZ, JORGE L

ART UNIT	PAPER NUMBER
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2697

DATE MAILED: 03/27/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/768,131

Applicant(s)

PARK, YONG CHEOL

Examiner

Jorge L Ortiz-Criado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Ito et al. U.S. Patent No. 6,160,778.

Regarding claim 4, Ito et al. discloses a method of formatting a recording medium having a predetermined recording capacity including a spare area for replacing defect areas (See Abstract), the method comprising the steps of:

registering defective area information in a defect area management list (See col. 10, lines 6-9);

replacing the defective areas with corresponding spare areas in response to the number of registered defective areas in the defect area management list (See col. 10, lines 22-41);
confirming whether or not an error has occurred due to lack of the spare area in comparison to the defective areas (See col. 10, lines 42-56; col. 12, lines 41-43; Fig. 4);

and if it is confirmed that the error has occurred, adjusting the recording capacity of the recording medium by the number of un-replaced defective areas (See col. 12, lines 44-67 to col. 13, lines 1-52).

Regarding claim 5, Ito et al. discloses wherein the recording capacity adjusting step is achieved by adjusting recording capacity information written in a specified area of the recording medium (See col. 9, lines 32-34; col. 12, lines 44-54; col. 13, lines 30-41).

Regarding claim 6, Ito et al. discloses the recording capacity information is a logical sector number (See col. 9, lines 32-43).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1-3, and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. U.S. Patent No. 6,160,778.

Regarding claim 1, Ito et al. (778) discloses a method of formatting a recording medium having a recording capacity, comprising the steps of (See Abstract; Fig.1A):

registering defective blocks in the defect lists (See col. 10, lines 14-28)

and performing a slipping replacement (Sectors replacement) corresponding to a number of defect list registrations (See col. 10, lines 20-34);

determining a slipping replacement error in response to the number of registrations, checking a number of un-slipped(un-replaced) registrations (See col. 10, lines 35-46);

and adjusting the recording capacity of the recording medium by the number of un-replaced un-slipped(un-replaced) registrations if the slipping replacement(Sectors replacement) error has occurred (See col. 12, lines 41-67 to col. 13, lines 1-52; Fig 4, 5)

But Ito et al. fail to disclose registering defective sectors in the primary defect list (PDL). However Ito et al. discloses registering the defective sectors in the secondary defect list (SDL) using either slipping replacement (sectors replacement) or linear replacement (blocks replacement).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to perform replacement defective sector in the primary defect list (PDL), using the method disclosed by Ito et al. in order to providing an information recording medium where it is possible to manage a defective block even when there is no spare block available to replace the

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defective block so as to reduce the risk that the read modified write operation fails, thereby increasing the reliability as suggested by Ito et al.

Regarding claim 2, Ito et al. further discloses wherein the recording capacity adjusting step is achieved by adjusting recording capacity information written in a specified area of the recording medium (See col. 9, lines 32-34; col. 12, lines 44-54; col. 13, lines 30-41).

Regarding claim 3, Ito et al. further discloses the recording capacity information is a logical sector number (See col. 9, lines 32-43).

Regarding claim 7, Ito et al. a method of formatting a recording medium having a predetermined recording capacity including a spare area, comprising the steps of:

registering defective segment addresses corresponding to defective segments in a defect list in the recording medium (See col. 10, lines 30-32);

performing a first defect replacement in response to the defective segment addresses in the first defect list (See col.10, lines 20-46);

determining a first defect replacement error, wherein the first defect replacement error is caused when a size of the defective segments exceeds the spare area; checking un-slipped segments by determining a number of the defective segments not subjected to the first defect replacement due to insufficient spare area (See col. 10, lines 47-65);

and adjusting the predetermined recording capacity of the recording medium by the number of un-slipped segments (See col. 12, lines 41-67 to col. 13, lines 1-52; Fig 4, 5).

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But Ito et al. fail to disclose registering defective sectors in the first defect list. However Ito et al. discloses registering the defective sectors in the secondary defect list (SDL) using either slipping replacement (sectors replacement) or linear replacement (blocks replacement).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to perform replacement defective sector in the first list, using the method disclosed by Ito et al. in order to providing an information recording medium where it is possible to manage a defective block even when there is no spare block available to replace the defective block so as to reduce the risk that the read modified write operation fails, thereby increasing the reliability as suggested by Ito et al.

Regarding claim 8, Ito et al. further fail to disclose wherein the first defect list is a primary defect list (PDL). However Ito et al. discloses registering the defective sectors in the secondary defect list (SDL) using either slipping replacement (sectors replacement) or linear replacement (blocks replacement).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to perform replacement defective sector in the primary defect list (PDL), using the method disclosed by Ito et al. in order to providing an information recording medium where it is possible to manage a defective block even when there is no spare block available to replace the defective block so as to reduce the risk that the read modified write operation fails, thereby increasing the reliability as suggested by Ito et al.

Regarding claim 9, Ito et al. further discloses wherein the first defect replacement is a slipping replacement (sectors replacement) (See col. 10, lines 20-34).

Regarding claim 10, Ito et al. further discloses wherein the first defect replacement is a slipping replacement (See col. 10, lines 20-34).

Regarding claim 11, Ito et al. further discloses wherein each defective segment comprises a defective sector (See col. 11, lines 18-36; Fig. 4,5,20A).

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to management of defective areas.
 - a. U.S Patent No. 5,715,221 to Ito et al., which discloses a method for managing defects in an information recording medium.
 - b. U.S Patent No. 5,956,309 to Yamamuro, which discloses a replacement processing method.
 - c. U.S Patent No. 5,111,444 to Fukushima et al., which discloses a method of managing defective sectors.
 - d. U.S Patent No. 5,241,531 to Ohno et al., which discloses a method for managing defective sectors in the storage medium.

- e. U.S Patent No. 5,271,018 to Chan, which discloses a method and apparatus for defect management.
- f. U.S Patent No. 6,373,800 to Takahashi, which discloses a method with replacement process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L Ortiz-Criado whose telephone number is (703) 305-8323. The examiner can normally be reached on Mon.-Thu. (8:30 am - 6:00 pm), Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HOFSAASS R JEFFERY can be reached on (703) 305-4717. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6743 for regular communications and (703) 308-6743 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

joc
March 21, 2003


Richmond Dorvil
Primary Examiner